BEFORE THE BOARD OF OIL, GAS AND MINING

DEPARTMENT OF NATURAL RESOURCES

IN AND FOR THE STATE OF UTAH

IN THE MATTER OF THE REQUEST FOR AGENCY ACTION OF SUMMIT OPERATING, LLC, FOR AN ORDER ESTABLISHING A 320-ACRE DRILLING AND SPACING UNIT FOR A HORIZONTAL WELL IN AND THE PRODUCTION OF OIL, GAS, AND OTHER HYDROCARBONS FROM THE GREEN RIVER FORMATION IN THE WEST HALF OF SECTION 16, TOWNSHIP 7 SOUTH, RANGE 21 EAST, SALT LAKE MERIDIAN, UINTAH COUNTY, UTAH.

DOCKET NO. 2011-003 CAUSE NO. 270-01

TAKEN AT: Department of Natural Resources
1594 West North Temple, Room 1040
Salt Lake City, Utah

DATE: Thursday, February 24, 2011

TIME: 9:09 a.m. to 10:02 a.m.

REPORTED BY: Michelle Mallonee, RPR

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JOB #A501C15

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Jake Y. Harouny (Excused)
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Kelly L. Payne
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I N D E X

Docket No. 2011-003 Cause No. 270-01

Thursday, February 24, 2011

(The proceedings began at 9:09 a.m.)

CHAIRMAN JOHNSON: Should we go ahead, then, with the Minerals Regulatory Program Rules -- or let's do Summit Energy. Let's do Summit Energy, then, okay.

Docket No. 2011-003 Cause No. 270-01 - In the Matter of the Request for Agency Action of SUMMIT OPERATING, LLC, for an Order Establishing a 320-Acre Drilling and Spacing Unit for a Horizontal Well in and the Production of Oil, Gas, and other Hydrocarbons from the Green River Formation in the West Half of Section 16, Township 7 South, Range 21 East, Salt Lake Meridian, Uintah County, Utah.

Mr. Schwendiman, you are representing the petitioner?

MR. SCHWENDIMAN: Yes, Mr. Chairman. Just waiting for the projector to come up.

CHAIRMAN JOHNSON: Okay.

Ms. Lewis, you are representing the Division?

MS. LEWIS: Yes, I am.

CHAIRMAN JOHNSON: Okay. All right.

So Mr. Schwendiman, whenever you would like to proceed, please go ahead.

MR. SCHWENDIMAN: Thank you, Mr. Chairman,

Members of the Board. Can you hear me?

CHAIRMAN JOHNSON: Move it up a little bit. Mr. Gill is always straining to hear.

MR. SCHWENDIMAN: Is this better?

MR. GILL: Yes.

MR. SCHWENDIMAN: For the record, my name is Jeremy Schwendiman. I'm a licensed attorney in the state of Utah. I represent Summit Operating, LLC, here today. Summit is the operator of State Lease ML40904, which encompasses the west half of Section 16, Township 7 South, Range 21 East, Salt Lake Meridian, Uintah County, Utah. This is approximately 16 miles due south of Vernal City, Utah. The west half of Section 16 contains approximately 320 acres.

Within the past two to three years, the neighbors of Summit on both the west and the east sides have begun to use horizontal drilling technology to extract hydrocarbons in the area. It has proven to be a very effective and efficient way to get to the hydrocarbons of the particular formations.

Summit believes that on its acreage it would also like to utilize this technology to get to the hydrocarbons, believing that it will reduce the number of vertical wells it will have to drill. However, the general spacing rules in Utah for horizontal wells

require 640 acres to drill one. Therefore, Summit comes to the Board today seeking a 320-acre drilling and spacing unit, which will encompass the entirety of the lease.

Today I have two witnesses I'd like to present to the Board. First, Mr. Ellis Peterson, senior petroleum engineer for Summit Operating, will testify as to the engineering of the area, the potential drainage, as well as the leases and the surrounding areas of Summit's acreage.

Second, Mr. Carl Kendell, geologist for Summit Operating, will testify as to the formations, the structures, the geological nature of the site, and the ability to reach hydrocarbons on the leased acreage.

So if there are no preliminary questions, I would ask that Mr. Peterson and Mr. Kendell be sworn in at this time.

CHAIRMAN JOHNSON: Let's do that, please.

THE REPORTER: Will you raise your right hands, please.

You and each of you do solemnly swear the testimony you are about to give will be the truth, the whole truth, and nothing but the truth so help you God?

(The witnesses answered in the affirmative.)

MR. SCHWENDIMAN: As expert witnesses.

CHAIRMAN JOHNSON: As you introduce each one, you can go through their experience and credentials. Let's address expert status at that time.

MR. SCHWENDIMAN: All right. That's fine.

Let's start with Mr. Peterson.

ELLIS PETERSON,

Having first been duly sworn,

was examined and testified as follows:

DIRECT EXAMINATION

BY MR. SCHWENDIMAN:

MR. SCHWENDIMAN: Mr. Peterson, could you please state your name for the record.

MR. PETERSON: Ellis Peterson.

MR. SCHWENDIMAN: Are you affiliated with Summit Operating?

MR. PETERSON: Yes. I'm an employee of Summit Operating.

MR. SCHWENDIMAN: How long have you worked for Summit?

MR. PETERSON: Approximately 16 months.

MR. SCHWENDIMAN: Could you please briefly describe your responsibilities with Summit?

MR. PETERSON: My title is Senior Petroleum Engineer. I am responsible for providing technical support for managers and other employees. I am

responsible for evaluating, planning, and recommending projects to develop oil and gas. I also help coordinate land activities related to the oil and gas operations.

MR. SCHWENDIMAN: Please provide a brief explanation of your educational background and experience as a petroleum engineer.

MR. PETERSON: I graduated with a bachelor of science in field engineering from the University of Utah. And I have been employed continuously as a petroleum engineer for over 30 years.

MR. SCHWENDIMAN: Are you certified by any professional organizations?

MR. PETERSON: I am registered in Utah and Wyoming as a professional petroleum engineer.

MR. SCHWENDIMAN: Have you testified before any courts or state boards before on matters relating to petroleum engineering?

MR. PETERSON: Yes. I have given testimony as a petroleum engineer in proceedings in Texas, Wyoming, and Montana.

MR. SCHWENDIMAN: And are you familiar with the subject lands involved in Summit's application?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: Mr. Chairman, I would ask that the Board recognize Mr. Peterson as an expert in the

field of petroleum engineering and as someone knowledgeable about the subject lands.

CHAIRMAN JOHNSON: Ms. Lewis?

MS. LEWIS: No objection.

CHAIRMAN JOHNSON: Does the Board have any questions or objections?

Then we'll recognize him as an expert as you've asked.

MR. SCHWENDIMAN: Thank you, Mr. Chairman.

Mr. Peterson, how long has Summit operated oil and gas wells in the state of Utah?

MR. PETERSON: For over eight years.

MR. SCHWENDIMAN: Does Summit operate other wells in the Uinta Basin, and if so, approximately how many?

MR. PETERSON: Yes, they do. Summit operates 23 wells in the Uinta Basin.

MR. SCHWENDIMAN: Is Summit properly licensed to conduct business in the state of Utah?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: What process have you done to decide that a horizontal well would be beneficial on subject acreage?

MR. PETERSON: I estimated the potential oil recovery from a horizontal well at this location and

developed a notional production forecast to recover the estimated oil reserves. I estimated the cost of a horizontal well, then completed an economic analysis to quantify the potential financial benefit to the working interest owners.

MR. SCHWENDIMAN: We would like to start with Exhibit 1, then.

Mr. Peterson, do you recognize Exhibit 1?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: Have you examined this document, and are you familiar with it?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: Could you please explain Exhibit 1 and how it was generated?

MR. PETERSON: Exhibit 1 is a photocopy of a Division of Oil, Gas and Mining Form 9 Sundry Notice, requesting that operatorship of subject lands be transferred to Summit Operating.

MR. SCHWENDIMAN: Why is this exhibit important?

MR. PETERSON: It shows that Summit Operating assumed operatorship of the well located in and leases covering the west half of Section 16, Township 7 South, Range 21 East on August 1, 2005.

MR. SCHWENDIMAN: And was this change of operatorship approved by the Division of Oil, Gas and

Mining?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: Is Summit properly bonded with the state of Utah for the west half of Section 16?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: To the best of your knowledge, is this exhibit accurate?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: I'd like to move on to Exhibit 2, then.

Mr. Peterson, do you recognize Exhibit 2?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: Was the exhibit created by you or under your supervision?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: What does this map show?

MR. PETERSON: This is a lease plat showing the subject 320-acre lease that's operated by Summit Operating and the leases and units located adjacent to the property, which are controlled by other operators.

MR. SCHWENDIMAN: Could you please point out for the Board where exactly Summit's lease is on this map?

MR. PETERSON: Summit's lease is the west half of Section 16 and is colored yellow on the map.

MR. SCHWENDIMAN: Who owns the minerals of

Summit's lease?

MR. PETERSON: The state of Utah.

MR. SCHWENDIMAN: And who administers those minerals?

MR. PETERSON: Utah School Institutional Trust Lands Administration, also known as SITLA.

MR. SCHWENDIMAN: Mr. Peterson, could you please explain what the green areas on this map represent?

MR. PETERSON: The green areas represent lands that are operated by MAR/REG Oil. MAR/REG is listed with the Division of Oil, Gas and Mining as the operator of record. The interest owners of the green areas were determined through researching county records and from a list of owners provided by MAR/REG.

MR. SCHWENDIMAN: Have those owners, royalty interest owners, and operators been notified of this request?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: Mr. Peterson, could you please explain the gray areas on this map.

MR. PETERSON: All right. These larger gray areas represent two federal units, the Brennan Bottom unit to the left, and the Johnson Bottom to the right. QEP Energy Company is listed with the federal government as operator of both of these units.

The interest owners of the gray units were determined through researching the unit file at the BLM, as well as county records.

MR. SCHWENDIMAN: And were the operators, royalty owners, and interest owners of those units notified of this request?

MR. PETERSON: Yes, they were.

MR. SCHWENDIMAN: Does Summit operate any wells portrayed on this map?

MR. PETERSON: Yes. Summit operates one well on the subject lease. It is named the State 14-16. It is located in the southwest-southwest corner of Section 16.

MR. SCHWENDIMAN: Are there any horizontal wells portrayed on this map?

MR. PETERSON: A number of horizontal wells have been drilled in the adjacent QEP Energy operated units. Those horizontal wells are shown on the map as lines connecting two dots, with the larger connected dot representing the surface location, and the smaller connected dot representing the bottom hole location of a horizontal well.

Horizontal wells depicted on the map as having non linear trajectories are wells for which the deviation surveys were made available to the public. Utah Division of Oil, Gas and Mining provided bottom hole locations but

not the deviation details for horizontal wells depicted with linear trajectories, those -- one in Section 17, Section 21, and Section 22.

CHAIRMAN JOHNSON: Mr. Peterson, would you make sure you use your microphone.

MR. PETERSON: I sure will, thanks.

CHAIRMAN JOHNSON: Thank you.

MR. SCHWENDIMAN: Mr. Peterson, why is this exhibit important?

MR. PETERSON: It illustrates that the state-owned minerals and the Summit-operated lease is sandwiched between two federal units, both of which use horizontal wells to exploit the oil reserves. It also shows that other companies do believe that horizontal wells are an efficient way to recover oil in this particular area.

MR. SCHWENDIMAN: To the best of your knowledge, is this exhibit accurate?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: Thank you. We'd like the move to Exhibit 3.

MR. JENSEN: Counsel, do you want to move on Exhibits 1 and 2, as well, as you are doing it?

MR. SCHWENDIMAN: I was going to have them all, at the end of Mr. Peterson's testimony, put into the

record. But I can individually put them in.

MR. JENSEN: Maybe I misunderstood. I thought I just heard you move for Exhibit 3 to be admitted.

CHAIRMAN JOHNSON: No. I think he's just changing to Exhibit 3.

MR. SCHWENDIMAN: Move on to Exhibit 3.

CHAIRMAN JOHNSON: I'm sorry. I told you I heard you wrong.

MR. SCHWENDIMAN: That's okay.

MR. JENSEN: Thank you.

MR. SCHWENDIMAN: Mr. Peterson, do you recognize Exhibit 3?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: Was this exhibit generated by you or under your supervision?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: How was this image generated?

MR. PETERSON: This picture is an expanded display of Exhibit 16 that shows the details of the planned horizontal wellbore.

MR. SCHWENDIMAN: Would you please explain Exhibit 3 for the Board.

MR. PETERSON: Yes. The west half of Section 16, operated by Summit Operating, is colored yellow. The proposed surface location of the well is a red dot. And

the planned horizontal section of the well is displayed as a dashed line, dashed black line. Please note that the planned surface location is 603 feet from the north section line. But the horizontal portion of the well bore begins 500 feet south of that surface location.

The area colored orange corresponds to where the horizontal section of the well must be to comply with Utah Division of Oil, Gas and Mining location and siting rules in R649-3-2. Those rules require that no portion of the horizontal section be closer than 660 feet to a drilling or spacing unit boundary, and no closer than 1320 feet to an existing vertical well producing from the same formation. Again, the State 14-16 located in the southwest-southwest quarter of Section 16 is operated by Summit.

I would also like to point out and discuss wells that immediately offset the subject lease. There are two wells located on the east half of Section 16, the Brennan Federal 4 and the 15G-16-7-21. These wells are not operated by Summit. Brennan 4 was drilled and abandoned in the 1950s after recovering less than 1000 barrels of oil. The 15G-16-7-21 was drilled in 2006, and is a low-volume producer with cumulative recovery of less than 4000 barrels of oil.

The Brennan Federal 8 and the Brennan Federal 3,

located immediately west of the subject lease in Section 17, were originally drilled and produced as vertical wells before being sidetracked as horizontal wells in 2009 and 2010. Other wells located in Section 8 -- yes, sir.

MR. GILL: I'm sorry. I think you answered my question on No. 2. I was just trying to figure out where the surface location was of those two wells. But I can go back to 2 and find it. And the two --

CHAIRMAN JOHNSON: It's on 3.

MR. GILL: The dots are the same size. I couldn't tell which was the surface location, and I just want to slow you down until I figured that out.

MR. PETERSON: All right. The surface locations are the dots closest to our lease. And then both of them have trajectories going to the northwest.

Other wells located in Sections 8, 20, and 21 will be mentioned as they relate to expected drainage.

MR. SCHWENDIMAN: Mr. Peterson, are there any plugged or shut-in wells depicted on this map?

MR. PETERSON: Yes. The Brennan Federal 13-10, located in the southwest quarter of Section 10, and the Brennan Federal 4, located in the northeast quarter of Section 16, are plugged. The Federal 320, located in the northeast quarter of Section 20, is reported as shut-in.

MR. SCHWENDIMAN: Mr. Peterson, why is this exhibit important?

MR. PETERSON: It illustrates that the State 3H-16-7-21 well, as proposed, is in compliance with all location and citing rules. The only requested rule variation is a reduction of spacing from 640 to 320 acres.

MR. SCHWENDIMAN: And to the best of your knowledge, is this exhibit accurate?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: Okay. We'll move on to Exhibit 4.

Mr. Peterson, do you recognize Exhibit 4?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: Was this exhibit created by you or under your supervision?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: How was this image generated?

MR. PETERSON: This exhibit illustrates how drainage area of a vertical well can be related to drainage area of a horizontal well in the same formation.

MR. SCHWENDIMAN: Could you please explain Exhibit 4.

MR. PETERSON: In the absence of directional permeability information, as in our case, it is common to

describe the area drained by a vertical well as a circular drainage pattern having a constant radius. The radius, the drainage radius corresponding to that drainage area, is known as the "drainage radius." As shown on the illustration, the horizontal lateral in a homogeneous and continuous formation is expected to drain a distance from all portions of that horizontal lateral end zone with the same drainage radius as would be expected in a vertical well.

While the horizontal wells in this area are relatively new and information on them is generally unavailable, there is sufficient information available to estimate the drainage for vertical wells in the vicinity of the proposed well. So the expected drainage for the proposed horizontal well can be estimated using the available vertical well data.

Exhibit 4 illustrates that vertical-to-horizontal drainage relationship.

MR. SCHWENDIMAN: Could you sum up why this exhibit is important?

MR. PETERSON: It helps explain how the drainage of vertical wells can apply to the expected drainage of the horizontal well.

MR. SCHWENDIMAN: Thank you. Let's move on to Exhibit 5.

MR. GILL: Is that the original or revised?

MR. SCHWENDIMAN: This would be the revised.

Mr. Peterson, do you recognize Exhibit 5?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: Was this exhibit created by you or under your supervision?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: How was this image generated?

MR. PETERSON: The drainage radii for vertical wells in the vicinity of the proposed horizontal well were estimated, and the results are summarized in a table. This exhibit is a copy of that table.

MR. SCHWENDIMAN: Okay. Would you please explain Exhibit 5, specifically the numbers.

MR. PETERSON: Yeah. The table in this exhibit shows the vertical wells in the vicinity of the proposed well, the hydrocarbon pore volume completed in each well, the expected ultimate recovery for each of those wells, and the corresponding drainage radius for each well based on a 10 percent and a 20 percent recovery factor.

In explanation of each parameter, the hydrocarbon pore volume is estimated -- is determined, actually, by multiplying the net formation thickness by the formation porosity and oil saturation, all of which are derived or estimated using log data. Conceptually,

the hydrocarbon pore volume can be thought of as the height of an oil tank representing each well after mathematically removing the co-existing rock and water.

The estimated ultimate recovery for each well is based on the historic and projected production. As the name implies, this parameter is the total oil each of those wells is expected to produce over its economic life.

For the two vertical wells in Section 17 that have been sidetracked with horizontal laterals, only the oil recovery projected from the vertical well is included in the listed expected ultimate recovery value.

A relatively small portion of the oil originally existing within a drainage area is actually ever recovered. And the fraction of the oil-in-place that is recovered is termed the "recovery factor." This factor is very difficult to quantify for a given reservoir. But from my experience, it is expected to range from approximately 10 percent to 20 percent for the producing formation under the subject lands.

So having estimated the oil column height and the projected recovery, the drainage area and corresponding drainage radius was computed for each well in the vicinity of our lease at the high and low value of the range of what I consider reasonable recovery factors.

Those computed drainage radii range from 231 to 1987 feet and average approximately 1040 feet for the most conservative 10 percent recovery factor.

MR. GILL: I have a question when you are through -- when you get to a good point.

MR. SCHWENDIMAN: Go ahead.

MR. PETERSON: Okay.

MR. GILL: I notice your hydrocarbon pore volume. Where do you inject permeability, and what kind of numbers are you seeing in terms of permeability?

MR. PETERSON: Permeability doesn't factor into the hydrocarbon pore volume. Permeability would factor --

MR. GILL: It would go to a recovery factor.

MR. PETERSON: It would go into a recovery factor. And in this case, we don't have any good database for recovery factor. Like I said, we have to go off experience and what would be expected from these and try to use conservative values that seem reasonable. Because permeability certainly would factor in -- relative permeability factor, especially, would factor into that. But rate doesn't factor into this, other than in calculating your EUR, of course.

MR. GILL: Do you consider this pool that's being spaced a tight formation?

MR. PETERSON: There are intervals in the area being pooled that can be considered tight, others not. The limestones being targeted by the horizontal wells are not so tight as some of the sand intervals in the geologic section.

MR. GILL: So you'll have natural permeability --

MR. PETERSON: You will have natural permeability.

MR. GILL: -- that you are going to be using in the ultimate recovery for this well?

MR. PETERSON: Yes, that is correct.

MR. GILL: That's all I have.

MR. SCHWENDIMAN: Mr. Peterson, based on your projections in this table as to the drainage radius, what would be your best projection for the proposed well?

MR. PETERSON: The data indicates that the horizontal lateral would drain approximately 700 to 1000 feet. My expectation of drainage radius would be closer to the lesser of the two values.

MR. SCHWENDIMAN: And this would be entirely within the 320 acres?

MR. PETERSON: That is correct.

MR. SCHWENDIMAN: In your professional opinion, would the proposed horizontal well drain any of the

leases around Summit's lease?

MR. PETERSON: No.

MR. SCHWENDIMAN: To the best of your knowledge, is this exhibit accurate?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: In your professional opinion, why should this Board grant a 320-acre spacing unit for a proposed horizontal well?

MR. PETERSON: Because it will allow the most efficient recovery of oil from the subject lands. And if not granted, the state of Utah's mineral owner and the working interest owners would not be allowed to fully benefit from this asset.

MR. SCHWENDIMAN: In your professional opinion, will this proposed horizontal well prevent waste?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: In your opinion, will this proposed horizontal well protect correlative rights?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: And in your opinion, will this proposed well be an efficient use of Utah's resources?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: Were the documents presented as exhibits created in preparation of this hearing or in the ordinary course of business?

MR. PETERSON: Yes.

MR. SCHWENDIMAN: Mr. Chairman, I would now ask that the exhibits listed Petitioner Exhibits 1 through 5 be admitted into the record.

CHAIRMAN JOHNSON: And that's --

MR. SCHWENDIMAN: -- revised 5.

CHAIRMAN JOHNSON: -- revised Exhibit 5?

MR. SCHWENDIMAN: Revised Exhibit 5, yes.

CHAIRMAN JOHNSON: Ms. Lewis?

MS. LEWIS: No objections to the exhibits.

CHAIRMAN JOHNSON: Does the Board have any objections or questions?

Then those are admitted.

MR. SCHWENDIMAN: Thank you, Mr. Chairman.

That is all the questions I have for Mr. Peterson at this time.

CHAIRMAN JOHNSON: Ms. Lewis, do you have questions for Mr. Peterson?

MS. LEWIS: The Division would like to refer to its staff, Mr. Dustin Doucet, for the questions.

CHAIRMAN JOHNSON: Mr. Doucet.

CROSS-EXAMINATION

BY MR. DOUCET:

MR. DOUCET: Dustin Doucet, petroleum engineer for the Division. Just got a couple questions.

First of all, on Exhibit 3 you are depicting that you are basically going to be drilling down the center. I guess the first question: Is that the intent, is to, essentially, drill your horizontal lateral down the center of that 320-acre...

MR. PETERSON: That is our intent. Of course, that can deviate a little in the operation practice --

MR. DOUCET: And I believe you said on here, also, that you were going to adhere to the 660-foot setback. Is that accurate?

MR. PETERSON: Yes, that is accurate as depicted by -- the orange is actually -- the outer boundary of that orange area is 660 feet from the lease boundary.

MR. DOUCET: So you never get closer than 660 feet to the offsetting units or leases?

MR. PETERSON: No. We never would get closer than that 660-foot offset.

MR. DOUCET: Then on Exhibit 5, on the Brennan Federal No. 3, that drainage radius is considerably higher than the rest. Any explanation as to why that is?

MR. PETERSON: Again, that is a well we do not operate. And that well happens to be held confidential at this time because it was sidetracked as a deviated well quite recently -- well, a little bit over a year ago. So all of the records for that well are still held

confidential. I was working off of old logs and trying to be as conservative as I could. That well has produced a long time. You'll notice it has recovered a lot of oil.

And, of course, the other factor that goes into it is that hydrocarbon pore volume, which I conservatively estimated from old microfiche logs, which may or may not be accurate. So I took a very conservative stance.

I, personally, would not expect that drainage radius to be as high as shown here. I think that's a factor of the data that I had available and me trying to keep it as conservative as possible.

MR. DOUCET: Okay. Thanks.

MS. LEWIS: Division has no further questions.

CHAIRMAN JOHNSON: Does the Board have any questions for Mr. Peterson?

Mr. Schwendiman, do you have any redirect questions for Mr. Peterson?

MR. SCHWENDIMAN: No, Mr. Chairman.

CHAIRMAN JOHNSON: Thank you.

Thank you, Mr. Peterson.

MR. SCHWENDIMAN: I'd now like to have Mr. Carl Kendell testify.

CARL F. KENDELL,

having been first duly sworn,

was examined and testified as follows:

DIRECT EXAMINATION

BY MR. SCHWENDIMAN:

MR. SCHWENDIMAN: Mr. Kendell, would you please state your full name for the record.

MR. KENDELL: Carl P. Kendell.

MR. SCHWENDIMAN: Are you affiliated with Summit Operating, and if so, how?

MR. KENDELL: Yes, I am. I'm employed -- been employed as a geologist for Summit for the past 13 months.

MR. SCHWENDIMAN: Would you please briefly describe your responsibilities with Summit Operating?

MR. KENDELL: I evaluate producing properties and outside-generated drilling prospects, as well as generate in-house drilling prospects myself.

MR. SCHWENDIMAN: Could you please provide a brief explanation of your educational background and experience as a geologist?

MR. KENDELL: I've obtained a bachelor of science degree in geology from Weber State University and did a year of graduate studies in geology at Montana State University, and have been employed continuously for the past 38 years as a petroleum geologist.

MR. SCHWENDIMAN: Are you a licensed geologist, and if so, where?

MR. KENDELL: I'm licensed in the states of Utah and Wyoming.

MR. SCHWENDIMAN: Have you ever testified before any courts or state boards regarding geology?

MR. KENDELL: I've testified before regulatory boards in the states of Utah, Wyoming, Montana, and North Dakota.

MR. SCHWENDIMAN: And are you familiar with the subject lands of Summit's application?

MR. KENDELL: Yes.

MR. SCHWENDIMAN: Mr. Chairman, I would ask this Board to recognize Mr. Kendell as an expert in the field of geology.

CHAIRMAN JOHNSON: Ms. Lewis?

MS. LEWIS: No objections.

CHAIRMAN JOHNSON: Does the Board have any objections?

Okay. We'll recognize Mr. Kendell as an expert.

MR. SCHWENDIMAN: Thank you, Mr. Chairman. We would like to start with Exhibit 6.

Mr. Kendell, do you recognize Exhibit 6?

MR. KENDELL: Yes.

MR. SCHWENDIMAN: Was this exhibit created by

you or under your supervision?

MR. KENDELL: Yes, it was.

MR. SCHWENDIMAN: How was this image generated?

MR. KENDELL: This image is generated from the use of well logs and put into a geographics -- geologic mapping program, and constructed by using that data to create two separate geologic components of this area as illustrated on this exhibit.

MR. SCHWENDIMAN: And would you please explain this exhibit to the Board.

MR. KENDELL: The first of the components is structural. It's illustrated by the thin black lines that go from the upper right to the lower left, generally. This is the TGR-3 structure. It's about 600 feet vertically above the G1 limestone, which is illustrated, which I'll discuss in a moment.

The structure component in here is on 100-foot contours and dips to the northwest at a fairly regular 250 to 150 feet per mile, and shows a mild syncline in here.

The purpose of including this in the exhibit is to show that the structural component there isn't really significant in trapping this accumulation. It's a pure stratigraphic trap.

The second component is the G1 limestone

isopach, which is illustrated in the red contours and is filled in with yellow. This is a prime horizontal producing zone in the areas. It's a thin limestone. Virtually all of the wells in the Brennan Bottoms unit to the west of the subject lease were drilled and completed in this zone, many of which are producing very nicely. This exhibit shows that we basically would like to continue that development to the east by one more.

This is a gross isopach rather than net. One of the reasons for that is, as Mr. Peterson alluded to, these well logs have quite a vast assortment of quality since this area was originally developed and began to be developed in the 1950s, and various vintages of logs occurring here. Some are pretty good quality, and a lot of them aren't.

MR. SCHWENDIMAN: Approximately what depth is this zone?

MR. KENDELL: Averages about 7000 feet in this area.

MR. SCHWENDIMAN: So the yellow area is approximately 7000 feet below the surface?

MR. KENDELL: Yes.

MR. SCHWENDIMAN: And as you stated, there are producing horizontal wells in this zone?

MR. KENDELL: Yes.

MR. SCHWENDIMAN: Why, in your opinion, is this exhibit important?

MR. KENDELL: It's important to show that this zone that produces in the immediate area is present underneath this subject lease. Also, there is a green line labeled "A-A prime" here that is shown in the subsequent exhibit that will be a cross section and will verify that contention.

MR. SCHWENDIMAN: To the best of your knowledge, is this exhibit accurate?

MR. KENDELL: Yes.

MR. SCHWENDIMAN: We'd like to move on to Exhibit 7.

Mr. Kendell, do you recognize Exhibit 7?

MR. KENDELL: Yes.

MR. SCHWENDIMAN: Was this exhibited created by you or under your supervision?

MR. KENDELL: Yes, it was.

MR. SCHWENDIMAN: How was this image generated?

MR. KENDELL: It was generated in the same fashion as the previous exhibit, on a geographics mapping program.

MR. SCHWENDIMAN: Can you please explain Exhibit 7 to the Board?

MR. KENDELL: This exhibit has the same

structural map that's on the previous exhibit. In addition, the H4A limestone isopach is include. This is a second thin limestone zone that produces in this area. It's about 250 feet deeper vertically than the previous G1 zone. This zone is producing in the two wells, in the two horizontal wells in the Johnson Bottom unit, shown in Sections 21 and 22 that goes down into Section 26, I think.

MR. SCHWENDIMAN: To sum up for the Board, the yellow area is approximately how much deeper than the previous exhibit?

MR. KENDELL: About 250 feet, vertical feet, deeper.

MR. SCHWENDIMAN: And there are producing horizontal wells in this zone as well?

MR. KENDELL: Yes, there are. The next exhibit will show their relationship to those and other producing sandstone zones within this interval.

MR. SCHWENDIMAN: To the best of your knowledge, is this exhibit accurate?

MR. KENDELL: Yes.

MR. SCHWENDIMAN: We'd like the move on to Exhibit 8.

MR. GILL: Can I ask a couple of questions?

CHAIRMAN JOHNSON: Yes.

MR. GILL: It's been a long time since we've sign a stratigraphic trap. I'm just kind of having fun with this, but what was the depositional characteristics that caused this? And then is it just a general uplift in the area? What is it that's -- just a little more general background.

MR. KENDELL: Okay. This is in the Lower Green River, the Douglas Creek member in the Lower Green River Formation, which was deposited in Lake Uinta, occupied an area somewhat larger than the current Uinta Basin -- went over into the Sanpete Valley and some of that area.

This lake at this time was fairly shallow. There's sandstones deposit from shoreline bars that moved out here. Also, in the case of these two particular zones that we've illustrated here, they're actually limestones that are oolitic, much like we see forming in the Great Salt Lake today. That means they were shallow shells that form on the bottoms. And they have little round fossils in them called ostricods, either an ostricod or oolitic limestones. They are quit thin, which makes them quite an appropriate use in horizontal drilling methods because the drill bit tends to stay within the porosity if you've got a long ways to drain. These thin limestones tend to not drain a great distance otherwise.

As Mr. Peterson alluded to, the permeability varies from place to place in this horizontal well. You can pick up the sweet spots as well as the tiger spots. That's the concept here. I hope that wasn't too long winded.

MR. GILL: That's just perfect. Thanks.

Thank you, Mr. Chairman.

CHAIRMAN JOHNSON: Go ahead.

MR. SCHWENDIMAN: We'll now move on to Exhibit 8.

Mr. Kendell, do you recognize Exhibit 8?

MR. KENDELL: Yes.

MR. SCHWENDIMAN: Was this exhibit created by you or under your supervision?

MR. KENDELL: Yes, it was.

MR. SCHWENDIMAN: How was this image generated?

MR. KENDELL: It was generated under the geographics cross section program with rasterized logs that are imported into that.

MR. SCHWENDIMAN: Could you please explain Exhibit 8 to the Board?

MR. KENDELL: Exhibit 8 shows Douglas Creek member of the Lower Green River Formation. It's about 600 feet thick between the Douglas Creek and the top of the Wasatch Formation. That's illustrated in red.

The G1 limestone and the H4A limestones, which were illustrated in the two previous exhibits in map view, were shown -- on the correlation logs, it shows their relationship to one another within Douglas Creek.

The little square red markers on the right-hand side of each log shows where those wells were perforated in the vertical wellbores. And as you can see, in all four of these wells, those two limestones were perforated and produce from those wellbores, as well as some other zones in between.

The main purpose of this exhibit is to show that these two zones occur under the subject lease, the Summit well being the third from the right. The State, the 14-16, we expect to encounter those as we drill into this. Our intent is to drill a vertical well, and log it, and look at the nature of these and make an informed decision on which zone to go horizontally in.

MR. SCHWENDIMAN: So is your professional opinion that you would find recoverable hydrocarbons in either, if not both, of these zones?

MR. KENDELL: Yes.

MR. SCHWENDIMAN: To the best of your knowledge, is this exhibit accurate?

MR. KENDELL: Yes.

MR. SCHWENDIMAN: We'd like to move on to the

last exhibit, Exhibit 9.

Mr. Kendell, do you recognize Exhibit 9?

MR. KENDELL: Yes.

MR. SCHWENDIMAN: Was this exhibit created by you or under your supervision?

MR. KENDELL: Yes, it was.

MR. SCHWENDIMAN: How was this image generated?

MR. KENDELL: Generated with a raster log imported in the geographics program and illustrated as we see it.

MR. SCHWENDIMAN: Would you please explain Exhibit 9 to the Board.

MR. KENDELL: It's basically a large version of the Summit Operating 14-16 well from the previous exhibit. The reason for this exhibit is to show the interval which we would like to have approval to drill horizontally in; that is, the Douglas Creek member of the Green River Formation. Both of these subject zones are embedded within that formation. If at some point it seems to be the right thing to do to stimulate these, this will allow us to do so without any further Board action if we're approved to drill a horizontal well in this area without exceeding our authority.

MR. SCHWENDIMAN: So using this exhibit, in the formation that Summit wishes to drill to, you believe

there are recoverable hydrocarbons?

MR. KENDELL: Yes.

MR. SCHWENDIMAN: To the best of your knowledge, is this exhibit accurate?

MR. KENDELL: Yes.

MR. SCHWENDIMAN: In your professional opinion, why should this Board grant a 320-acre spacing and drilling unit for the proposed horizontal well?

MR. KENDELL: It would be the best way to get an efficient recovery in here that will prevent waste and also protect correlative rights.

MR. SCHWENDIMAN: So it is your opinion this will prevent waste and protect correlative rights?

MR. KENDELL: Yes, it is.

MR. SCHWENDIMAN: In your opinion, will this horizontal well be an efficient use of Utah's resources?

MR. KENDELL: Yes.

MR. SCHWENDIMAN: Were the documents presented as exhibits created in preparation of this hearing or in the ordinary course of business?

MR. KENDELL: Yes, they were.

MR. SCHWENDIMAN: Mr. Chairman, I would now ask that the exhibits labeled Petitioner Exhibits 6 through 9 be admitted into the record.

CHAIRMAN JOHNSON: Ms. Lewis?

MS. LEWIS: No objections to the exhibits.

CHAIRMAN JOHNSON: Does the Board have any objections or questions?

Then we will admit Petitioner's Exhibits 6 through 9.

MR. SCHWENDIMAN: Thank you, Mr. Chairman. That is all the questions I have for Mr. Kendell at this time.

CHAIRMAN JOHNSON: Ms. Lewis.

MS. LEWIS: The Division has a few questions.

CROSS-EXAMINATION

BY MR. HILL:

MR. HILL: Brad Hill, oil and gas permitting manager for the Division.

Mr. Kendell, maybe I just missed this, but on Exhibits 6 and 7 pertaining to your isopach portions of those exhibits, are those numbers -- is that gross isopach or is that based on some net porosity?

MR. KENDELL: They're gross. Because the, as I mentioned, quality of the logs in here don't allow a good net evaluation over the entire area.

MR. HILL: Okay. Thank you.

On Exhibit 9, the illustration shows a proposed spaced interval. Just for sake of definition, could you define that proposed interval by footages as seen in the Summit Operating State 14-16?

MR. KENDELL: Okay. I'm not sure my bifocals are good enough to pick them off of the log.

Can you see those, Ellis?

MR. PETERSON: No. We can walk next door and look at the logs on record and supply that.

MR. KENDELL: That's a good question. I'm not sure. Under testimony, I don't want to take a guess at them from the exhibit. They're a little small.

MR. HILL: I'd be okay if the Board approves this, and that those footages be included in an order.

CHAIRMAN JOHNSON: I think that's a good suggestion, Mr. Hill.

So Mr. Kendell, you'll get that information to the Division, and the Division will forward it to the Board.

MR. KENDELL: Right away.

CHAIRMAN JOHNSON: Thank you.

MR. HILL: That's all I've got.

MS. LEWIS: No further questions.

CHAIRMAN JOHNSON: Does the Board have questions for Mr. Kendell?

Thank you, Mr. Kendell.

Mr. Schwendiman, do you have any redirect for Mr. Kendell?

MR. SCHWENDIMAN: No, Mr. Chairman.

CHAIRMAN JOHNSON: Then go ahead, Mr. Schwendiman.

MR. SCHWENDIMAN: Thank you. In conclusion, Mr. Chairman and Members of the Board, Summit believes that a horizontal well in either of these zones is a highly efficient and effective way to get to the recoverable hydrocarbons, and the spacing for a horizontal well in Utah is 640 acres. Therefore, Summit would like the unit to be reduced to 320 acres, which would encompass the entire lease that Summit has on Section 16, Township 7 South, Range 21 East, Salt Lake Meridian, Uintah County, Utah.

CHAIRMAN JOHNSON: Thank you.

MR. GILL: Mr. Chairman --

CHAIRMAN JOHNSON: Let's let Ms. Lewis --

Ms. Lewis, go ahead.

MS. LEWIS: The Division would like to have a couple questions for you.

We'd like to present Mr. Clint Dworshak, the compliance manager. Mr. Dworshak has been before this Board and recognized as an expert in the past. We'd ask that you recognize him in this case.

CHAIRMAN JOHNSON: We will do that. Would you like to have him sworn in?

MS. LEWIS: Sure.

THE REPORTER: Will you raise your right hand, please.

You do solemnly swear the testimony you are about to give will be the truth, the whole truth, and nothing but the truth so help you God?

THE WITNESS: I do.

CLINT DWORSHAK,

having been first duly sworn,

was examined and testified as follows:

DIRECT EXAMINATION

BY MS. LEWIS:

MS. LEWIS: Mr. Dworshak, did you review Summit Operating's spacing application?

MR. DWORSHAK: Yes. I was part of the staff that reviewed the submitted exhibits.

MS. LEWIS: In that review, did you prepare a memorandum summarizing your review?

MR. DWORSHAK: Yes. The Division staff and myself put together the February 10 memo to the Board.

MS. LEWIS: Were there any concerns with the application?

MR. DWORSHAK: Yes. The Division did address in a memo some concerns that we had. However, we believe that that has been addressed in testimony today. And they did give testimony that supported the land

engineering and geologic exhibits and their relevance to this matter. And also, they did address a concern we had with the setbacks from the requested unit boundary. And we believe that those setbacks are reasonable.

MS. LEWIS: For the record, (inaudible).

THE REPORTER: I'm sorry --

CHAIRMAN JOHNSON: Ms Lewis.

MS. LEWIS: I'm sorry. Microphones are the bane of your existence.

Have they additionally addressed those setback concerns?

MR. DWORSHAK: They have, yes.

MS. LEWIS: Including these additional considerations discussed in testimony today, what is your recommendation for Summit Operating's application?

MR. DWORSHAK: The Division supports the recommendation, and we'd recommend that the Board approves the Request.

CHAIRMAN JOHNSON: Mr. Schwendiman, do you have any questions for Mr. Dworshak?

MR. SCHWENDIMAN: No, Mr. Chairman.

CHAIRMAN JOHNSON: Does the Board have questions?

Okay. Thank you, Mr. Dworshak.

Ms. Lewis.

MS. LEWIS: In summary, the Division has reviewed Summit Operating's spacing application and recommends that it be approved.

CHAIRMAN JOHNSON: Thank you.

Mr. Schwendiman, anything else?

MR. SCHWENDIMAN: No, Mr. Chairman.

CHAIRMAN JOHNSON: Okay. Let me ask: Is there anyone else present who would like to address the Board regarding this matter?

Ms. Garrison.

MS. GARRISON: I'm Lavonne Garrison. I represent School and Institutional Trust Lands. We are the mineral owner of this section. We have reviewed the exhibits, and Trust Lands, of course, always likes to develop its asset to the maximum that we can. We, therefore, support their application and hope the Board will look favorably on an approval. Thank you.

CHAIRMAN JOHNSON: Thank you.

Anyone else?

What's the pleasure of the Board?

MR. JENSEN: Move approval.

MR. GILL: Mr. Chairman, if I might.

CHAIRMAN JOHNSON: Go ahead.

MR. GILL: I'd like to move that we approve the application as written, ask Mr. Schwendiman to prepare

the Order, that the Order set forth the indicators of the spaced interval, and that the Order make a specific reference and finding to the 660-acre for the setback.

MR. SCHWENDIMAN: Okay.

CHAIRMAN JOHNSON: Is there a second?

MR. JENSEN: Second.

CHAIRMAN JOHNSON: Okay. Moved and seconded.

Is there any discussion?

All those in favor say "Aye."

THE BOARD: Aye.

CHAIRMAN JOHNSON: Anyone opposed?

So your petition is granted, Mr. Schwendiman. Would you please prepare the Order?

MR. SCHWENDIMAN: Yes. Thank you, Mr. Chairman.

CHAIRMAN JOHNSON: And on behalf of the Board, I would like to thank you and compliment you on the preparation of your exhibits and your witnesses this morning. You gave us everything we needed very concisely, and we appreciate it.

MR. SCHWENDIMAN: Thank you, Mr. Chairman.

CHAIRMAN JOHNSON: Thank you.

MR. JENSEN: Mr. Chairman, I concur with that. I think Mr. Schwendiman and your witnesses here -- I realize that this has been uncontested, but I would say this has been a well-presented and well-documented case,

certainly in the two years that I've been on the Board. I commend you and Summit for a job well done.

MR. SCHWENDIMAN: Thank you.

CHAIRMAN JOHNSON: Thank you. Okay.

Let's take a ten-minute break, and then we will move on to the rules request.

And then, Mr. Ward, you'll be right after that, if you'd like to get set up. Let's take a ten-minute break.

(The matter was concluded at 10:02 a.m.)

CERTIFICATE

State of Utah)
ss.
County of Salt Lake)

I, Michelle Mallonee, a Registered Professional Reporter and Notary Public in and for the State of Utah, do hereby certify:

That the proceedings of said matter was reported by me in stenotype and thereafter transcribed into typewritten form;

That the same constitutes a true and correct transcription of said proceedings so taken and transcribed;

I further certify that I am not of kin or otherwise associated with any of the parties of said cause of action, and that I am not interested in the event thereof.

Michelle Mallonee, RPR, CSR